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Information Disclosure Citation

Applicants: Jon Lee Curzon et al.

Application No.: 10/805,089

Title: Flame Retardant and Microbe
Inhibiting Methods and Compositions

Filed: March 19, 2004

Group Art Unit:

Examiner:

1. U.S. Patents

Examiner Initial	Patent Number	Issue Date	Name	Class	Subclass	Filing Date
_____	6,893,752 B2	5/17/05	Veeramasuneni et al.	428	723	6/28/02
_____	6,699,426 B1	3/2/04	Burke	264	426	5/10/00
_____	6,680,127 B2	1/20/04	Capps	428	537.7	9/17/02
_____	6,387,172 B1	5/14/02	Yu et al.	106	680	4/25/00
_____	6,342,284 B1	1/29/02	Yu et al.	428	70	8/21/98
_____	6,335,308 B1	1/1/02	Kitten	504	101	3/29/00
_____	6,333,399	12/25/01	Teslenko et al.	536	20	2/12/96
_____	6,231,650 B1	5/15/01	Mallow et al.	106	15.05	9/17/99
_____	6,280,509 B1	8/28/01	Mallow et al.	106	15.05	9/10/99
_____	6,096,122	8/1/00	Kappock et al.	106	18.36	12/16/98
_____	6,010,596	1/4/00	Song	162	158	12/20/96
_____	5,939,203	8/17/99	Kappock et al.	428	469	2/21/97
_____	5,883,154	3/16/99	Kappock et al.	523	122	6/25/96
_____	5,612,094	3/18/97	Schubert et al.	427	397	10/18/95

_____	5,562,995	10/8/96	Kappock	428	469	2/3/95
_____	5,518,774	5/21/96	Kappock et al	427	384	6/26/95
_____	5,399,190	3/21/95	Conradie et al.	106	18	9/2/91
_____	4,961,865	10/9/90	Pennartz	252	7	3/6/89
_____	4,935,232	6/19/90	McIntosh	424	78	4/27/90
_____	4,816,186	3/28/89	Acitelli	252	610	11/3/86
_____	4,756,839	7/12/88	Curzon et al.	252	2	2/9/87
_____	4,725,382	2/16/88	Lewchalemwong	252	607	4/3/86
_____	4,647,486	3/3/87	Ali	428	70	6/11/85
_____	4,610,881	9/9/86	Bechgaard	424	148	2/12/82
_____	4,461,721	7/24/84	Goettsche et al.	252	607	4/12/82
_____	4,439,566 A	3/27/84	Thomas	524	108	4/16/82
_____	4,323,565	4/6/82	Hasegawa et al.	424	246	5/20/80
_____	4,303,726	12/1/81	Turner	427	297	6/25/80
_____	4,302,345	11/24/81	McCarter	252	62	9/12/80
_____	4,278,468	7/14/81	Selbe et al.	106	774	9/10/79
_____	4,234,340	11/18/80	Pellico	106	15.05	5/11/79
_____	4,116,931	9/29/78	Minhas et al.	260	45.75	12/19/77
_____	3,998,944	12/21/76	Long	424	413	5/8/74
_____	3,877,979	4/15/75	Clark	427	337	9/8/72
_____	2,432,963	12/16/47	Camp	_____	_____	3/30/45
_____	1,339,488	5/11/20	Weiss et al.	_____	_____	1/23/19

2. Published U.S. Patent Applications

Examiner Initial	Publication Number	Publication Date	Name	Class	Subclass	Filing Date
_____	US 2003/0031898 A1	2/13/03	Capps	428	703	9/17/02
_____	US 2003/0017565 A1	1/23/03	Echigo et al.	435	189	10/21/97
_____	US 2003/0234068 A1	12/25/03	Swofford et al.	156	39	6/6/03
_____	US 2003/0037502 A1	2/27/03	Bruce et al.	52	517	10/21/02
_____	US 2003/0035981 A1	2/20/03	Capps	428	703	8/1/02
_____	US 2004/0005484 A1	1/08/04	Veeramasuneni et al.	428	703	6/28/02

3. Related U.S. Patent Applications

Examiner Initial	Application Number	Filing Date	Name	Publication Number	Publication Date
_____	10/408,072	April 4, 2003	Curzon et al.	2003/0170317 A1	9/11/03
_____	10/176,411	June 19, 2002	Curzon et al.	None Known	None Known
_____	60/348,543	January 16, 2002	Curzon et al.	None	None

4. Foreign Patent Documents

Examiner Initial	Country	Patent Application Number	Patent or Publication Number	Patent or Publication Date
_____	Japan	JP2001000027115	JP 2002226828 A2	8/14/02
_____	Japan	JP1998000375719	JP 2000108108 A2	4/18/00
_____	Japan	JP200193039	JP 2002294205 A2	10/9/02
_____	Japan	JP19990098148	JP 2000290827	10/17/00

_____	Japan	JP 19920197468	JP 6025980 A2	2/1/94
_____	Japan	JP 19960198539	JP 10025479 A2	1/27/98
_____	Japan	JP 87153883	JP 88317302 A2	12/26/88
_____	Japan	JP99317880	JP 3122818 B1	1/9/01
_____	Japan	JP19980240104	JP2000063564 A2	2/29/00
_____	Japan	JP96199357	JP9836610 A2	2/10/98
_____	Japan	JP19960162176	JP 107861 A2	1/13/98
_____	Japan	EP20000971824	JP 2001-131409	12/19/01
_____	Japan	JP 4069301	JP 02180462	3/4/92
_____	China	CN 98100234	CN 1223290 A	7/21/99
_____	Russia	RU2000000119386	RU 2178029 C1	1/10/02
_____	Russia	RU19940041329	RU 2091417	9/27/97
_____	Russia	RU19940005044	RU 2071491	1/10/97
_____	Russia	RU1998104290	RU 2149148	5/20/00
_____	Russia	RU19990106231	RU 2147028 C1	3/27/00
_____	Romania	RO112819	RO 87738 B1	10/28/85
_____	Germany	DE 4339078	DE 4339078 A1	5/18/95
_____	Germany	DE7931162	DE 3010375	3/2/82
_____	Germany	P 41 20 993.1	DE 41 20993 A1	12/10/92
_____	Germany	P 41 08 341.5	DE 41 08341 A1	9/17/92
_____	United Kingdom	GB 19990023253	GB 2354771 A1	4/4/01
_____	United Kingdom	50580/70	GB 1 306 740	2/14/73

_____	Europe	87307228.4	EP 0 285 721 A1	10/12/88
_____	Europe	94111725.1	EP 0 636 461 A1	1/2/95
_____	Europe	90313913.7	EP 0 434 391	6/26/91
_____	Europe	EP89109931	EP 344771 A1	12/6/89
_____	PCT	PCT/US01/21203	WO 02/06021 A2	1/24/02
_____	PCT	WO 99GB2483	WO 2000/07804 A1	2/17/00
_____	PCT	PCT/EP99/04492	WO 00/00570	1/6/00
_____	PCT	PCT/US96/16443	WO 97/14303	4/24/97

5. Other Documents

<u>Examiner Initials</u>	<u>Author</u>	<u>Title, Publication, Relevant Pages, Date and Place of Publication</u>
_____	James F. O'Bryon	"Think Globally, Act Globally," Halon Options Technical Working Conference, April 27-29 (1999)
_____	J. Berezovsky et al.	"Pyrogen Fire Suppression Grenades," Halon Options Technical Working Conference, 480-487, April 27-29 (1999)
_____	Bradley A. Williams et al.	"Suppression Mechanisms of Alkali Metal Compounds," Halon Options Technical Working Conference, 157-166, April 27-29 (1999)
_____	Jennifer Fogel et al.	"Mold Performance of some Construction Products with and without Borates," Forest Prod. J. 52(2):38-43 (2002).
_____	Bradley A. Williams et al.	"Suppression Mechanisms of Alkali Metal Compounds," U.S. Naval Research Laboratory, Halon Options Technical Working Conference, pages 157-166 (April 27-29, 1999).

- _____ Berezovsky et al. "Pyrogen Fire Suppression Grenades," AES International, Huntsville, Australia, Halon Options Technical Working Conference, pages 481-487 (April 27-29, 1999).
- _____ G. G. Back et al. "Full Scale Evaluation of the Water Mist Additive QUAD-EX," Naval Research Laboratories, Halon Options Technical Working Conference (1999).
- _____ Alistagen Excerpt from web site
http://www.alistagen.com/products_body.htm
entitled "Description of Product" (2002).
- _____ Kumar Excerpt from web site
mnyrkumar@mailcity.com entitled "Chitin and Chitosan for Versatile Applications Homepage."
- _____ Interface, Inc. Intercept®, A Fungistat and Bacteriostat for Incorporation into Various Products, January 30, 2002.
- _____ United States Gypsum Company Material Safety Data Sheet, Sheetrock® Brand Humitek™ Gypsum Panels Firecode® Core, Type X, October 9, 2003
- _____ Troy Chemical Corp. Material Safety Data Sheet, Polyphase P100 (2001).
- _____ U.S. Borax Brochure entitled "Borax Products and their Applications," U.S. Borax (2002).
- _____ Alejandro Ferrando et al. "Regulation of Cation Transport in *Saccharomyces cerevisiae* by the Salt Tolerance Gene HAL3," Molecular and Cell Biology, Vol. 15, No. 10, 5470-5481 (1995).
- _____ Shiladitya DasSarma et al. "Halophiles," Encyclopedia of Life Sciences, 1-9, Nature Publishing Group (2001).
- _____ McGraw-Hill McGraw-Hill, Encyclopedia of Science & Technology, 8th ed., Vol. 10, pages 78-79 (1997).
- _____ McGraw-Hill McGraw-Hill, Encyclopedia of Science & Technology, 8th ed., Vol. 13, page 345 (1997).

- ____ McGraw-Hill McGraw-Hill, Encyclopedia of Science & Technology, 8th ed., Vol. 3, pages 430-431 and 437-438 (1997).
- ____ McGraw-Hill McGraw-Hill, Encyclopedia of Science & Technology, 8th ed., Vol. 8, pages 434-435 (1997).
- ____ McGraw-Hill McGraw-Hill, Encyclopedia of Science & Technology, 8th ed., Vol. 7, page 554 (1997).
- ____ NG Magill et al. "The Internal pH of the Forespore Compartment of *Bacillus megaterium* Decreases by about 1 pH Unit During Sporulation," J. Bacteriol. Vol. 176, No. 8, 2252-2258 (1994).
- ____ GP Ferguson et al. "Survival During Exposure to the Electrophilic Reagent N-Ethylmaleimide in *Escherichia coli*: Role of KefB and KefC Potassium Channels," J. Bacteriol. Vol. 179, No. 4, 1007-1012 (1997).
- ____ Cynthia Stewart et al. "*Staphylococcus aureus* Growth Boundaries: Moving Towards Mechanistic Predictive Models Based on Solute-Specific Effects," Appl. Envir. Microbial. 68: 1864-1871 (2002).
- ____ A. Lopez-Malo et al. "*Aspergillus flavus* Dose-Response Curves to Selected Natural and Synthetic Antimicrobials," Int. J. Food Microbiol 73(2-3):213-8 (2002).
- ____ DL Parker et al. "Potassium Salts Inhibit Growth of the Cyanobacteria Microcystis spp. in Pond Water and Defined Media: Implications for Control of Microcystin-Producing Aquatic Blooms," Appl. Environ. Microbiol. Vol. 63, No. 6, 2324-2329 (1997).
- ____ Carlos A. Stella et al. "Effect of Potassium on *Saccharomyces cerevisiae* Resistance to Fluconazole," Antimicrob. Agents Chemother. Vol. 45, No. 5, 1589-1590 (2001).

- _____ Th. H. Daniels et al. "Combustion Characteristics of Zinc Borate - Impregnated OSB Wood Waste in the Atmospheric Fluidized Bed," Proceedings of the 1998 32nd International Particleboard/Composite Materials Symposium, Pullman, WA, March 31 - April 2 of 1998, EI Conference No. 49403.
- _____ "Recent Progress in Topochemistry of Wood/Inorganic Composites as Prepared by the Sol/Gel Process," Proc. PRA 'Organic/Inorganic Hybrids' Conf., Guildford 2000, Paper 27, 19, pp. 2000.
- _____ Buckman Laboratories Inc. "Non-Toxic Corrosion Resistant Pigment," Notiziario 1977, No. 276, 1-3, RAPRA Abs 1978, Vol. 15, No. 3, Abs. 7711090L 1977.
- _____ M. Jensen et al. "Responses in Plant, Soil Inorganic and Microbial Nutrient Pools to Experimental Fire, Ash and Biomass Addition in a Woodland Savanna," OECOLOGIA, 2001, V128, N1 (JUN), 85-93 (2001).
- _____ Kyoto Univ. "Preservative Properties of Vapor Boron Treated Wood and Wood Based Compositions," J. Wood Sci., Vol. 47, No. 2, 149-153 (2001).
- _____ Taika Zairyo Taika Zairyo (Krosaki Technical Report, a Japanese publication), No. 146, 12-18 (1998).
- _____ Yamaguchi Haruhiko "Complexes of Silicic Acid Polymer-Inorganic Compounds as Wood Preserving Agents," Mokuzai Hozon (Wood Preservation) Vol. 22, No. 5, 254-261 (1996).
- _____ * Ishihara Shigehisa "Boron and its Compounds as Wood Fire Retardants," Mokuzai Hozon (Wood Preservation) Vol. 15, No. 6, 248-260 (1989).
- _____ Hagio Katsuhiko et al. "Durable Fire Retardant Treatment of Wood and Wood-Based Materials, Fire Retardant Treatment of Plywood, Doubling as Preservative Treatment," Mokuzai Hozon (Wood Preservation) Vol. 14, No. 1, 8-17 (1988).

- ____ M. K. Yalinkilic et al. "Boron Effect on Decay Resistance of some Fire Retardant Coatings Applied on Plywood Surface," *Holz als Roh- und Werkstoff*, 56 (5), 347-353 (1998).
- ____ P. E. Laks et al. "Anti-sapstain efficacy of Borates against *Aureobasidium* Pollutants," *Forest Products Journal*, 43 (1) , 33-34 (1993).
- ____ J. D. Bakker "Busan 11-M1 in the Formulation of Anticorrosive, Antimicrobial and Fireproof Paints," *Colores Pinturas* Vol. 20, No. 144, 5-17 (1971).
- ____ D. D. Sahgal et al. "Microbial Degradation of Materials and Equipment in Tropical Climate and its Control," *Labdev*, Vol. 5, No. 3, 175-81 (1967).
- ____ M. Petric et al. "Efficiency of some Boron Containing Wood Preservatives," *Wood in the Construction Industry, International Conference, Zagreb, Croatia, April 26, 2000*.
- ____ J. George "Boron Based Preservatives for Wood and Wood Products, *Wood News*, Vol. 9 (4), 21-22 (2000).
- ____ G. Dallemagne *Societe Nationale Industrielle Aerospatiale, Les Mureaux, France, Report No. SNLAS-821-551-105, DCQ/L-160.390/82, 14 pages (1982)*.
- ____ T. Ehrenfreund-Kleinman et al. "Synthesis and Characterization of Novel Water Soluble Amphotericin B-Ararinogalactan Conjugates," *Biomaterials*, V23, N5, 1327-1335 (2002).
- ____ T. Maeseto "Fabrication and Antibacterial Activity of Antibacterial Glass Linings by Ion Exchange Method," *Nippon Seramikkusu Kyokai Gakujutsu Ronbunshi*, 109(5), 477-479 (2001).
- ____ R. E. Sherburn "Amine Borate Catabolism by Bacteria Isolated from Contaminated Metal-Working Fluids," *Journal of Applied Microbiology*, 87 (5), 668-675 (1999).

- _____ Kelvin K. Shen "Flame Retardancy Advances in Fire Safety," U.S. Borax Research Corp., USA, Conference held at Pine Mountain, Georgia, USA, on March 28, 1984, E.I. Conference No. 07153.
- _____ Okada Kazuhisa Presentations at the 3rd JWSA Annual Meeting, Mokuzai Hozon (Wood Preservation) Vol. 23, No. 3, 133-135 (1997).
- _____ M. W. Scheoman et al. "The Role of Boron-Based Additives in Exterior Wood Coatings," Surf. Coat. Int., Vol. 82, No. 3, 124-126 (1999).
- _____ * Francisco P. Clemente "New Possibilities for the Manufacture of Fire Resistant Paper and Paper with Microorganism-Inhibiting Properties," Invest. Tec. Pap., Vol. 13, No. 48, 437-44 (1976).
- _____ M. A. Kasem "Flame-Retardants for Fabrics: Function of Boron-Containing Additives," Industrial and Engineering Chemistry Product Research and Development, V11, N2, 114-133 (1972).
- _____ W-Y Su et al. "Combustion Behavior of Boron-Alkali Metal Treated Wood Using Thermographic Analysis," Mokuzai Gakkaishi (Journal of the Japan Wood Research Society), Vol. 43, No. 1, 82-89 (1997).
- _____ Hata Toshimitsu et al. "Mechanism Evaluation and Development of Suppression of Wood Combustion by Boric Compounds," Wood Res. Inst., Kyoto Univ. Mokuzai Hozon (Wood Preservation), Vol. 21, No. 6, 299-305 (1995).
- _____ * Baoshu Yao et al. "Preparation of and Flame Retardance of Some Antimonides," Huaxue Shijie, Vol. 25, No. 11, 410-414 (1984).
- _____ P. G. Gordon et al. "Investigations into the Mechanisms of Flame Retardation on Wool," Text Res. J., Vol. 47, No. 11, 699-711 (1977).

_____	Jeffrey W. Gilman	"Char Enhancing Approaches to Flame Retarding Polymers," National Institute of Standards and Technology, Addit. '98, Int. Conf. Exhib, 7 th , 2/1-1/13, Gaithersburg, MD, USA (1998).
_____	Tara Williams-Hart et al.	"Protein Phosphatase Type I Regulates Ion Homeostasis in <i>Saccharomyces cerevisiae</i> ," Genetics 160: 1423-1437 (2002).
_____	Stephan J. A. Hesse et al.	"Intracellular pH Homeostasis in the Filamentous Fungus <i>Aspergillus niger</i> ," Eur. J. Biochem. 269, 3485-3493 (2002).
_____	N. Beales	"Adaptation of Microorganisms to Cold Temperatures, Weak Acid Preservatives, Low pH, and Osmotic Stress: A Review," Comprehensive Reviews in Food Science and Food Safety, Vol. 3, 1-20 (2004).
_____	The Gale Group	"Short Fibers Shorten Burn," Flame Retardancy, Supplier Number 72519327, News, V11, N3, pNA (2001).
_____	The Gale Group	Trade Name Directory, Supplier Number 72121921, Modern Plastics, pF-229 (February 15, 2001).
_____	The Gale Group	"Team Explores Expansion of Borate," Supplier Number 59678686, Flame Retardancy News, V10, N2, pNA (February of 2000).
_____	The Gale Group	Newswire, Supplier Number 56177653, Nippon Chemical Industrial Co., Comline Chemicals & Materials, p991008100029, Oct. 8, 1999.
_____	The Gale Group	"Mineral Fillers for Plastics and Elastomers," Supplier Number 50275161, Innovator's Digest, v98, n18, pN/A Sept. 1, 1998.
_____	The Gale Group	"Inorganic Based FRs: Mixed Additives for Thermoplastic," Supplier Number 44642846, Flame Retardancy News v4, n5, pN/A, May, 1994.

_____	The Gale Group	"Experimental Use Permits Granted by EPA Noted," Supplier Number 43358908, Pesticide & Toxic Chemical News, v20, n49, pN/A Oct. 7, 1992.
_____	The Gale Group	"Properties and Applications of a New Anti-Corrosion Pigment," Supplier Number 42839578, European Polymers Paint Colour Journal, p154, March 18, 1992.
_____	The Gale Group	"Japanese Continue to Develop New FR Epoxy Molding Compounds," Supplier Number 41837789, Flame Retardancy News, v1, n2, pN/A Feb. 1991.
_____	The Gale Group	"Cocoon Insulation," Advertisement, Supplier Number 97403841, Professional Builder (1993), 68, 1, 134(2), Feb. 2002.
_____	The Gale Group	"B Mail" (Letter to the Editor), Supplier Number 90655099, Builder, 25, 9, 24(1), August, 2002.
_____	The Gale Group	"The House that LP Built" (Special Advertising Supplement), Supplier Number 83056397, Professional Builder (1993), 67, 2, 52(30), Feb. 2002.
_____	David M. Schubert	"Multifunctional Zinc Borate-Based Anticorrosive Pigment," Supplier Number 12913585, Modern Paint and Coatings, v82, n8, p43(4), August, 1992.
_____	The Gale Group	"Antifungal Agents" (Continuing Education), Supplier Number 09298851, Drug Store News, v12, n14, pIP19(4), July 23, 1990.
_____	The Gale Group	"Electrical and Electronic Ceramics," Supplier Number 42719072, High Tech Ceramics News, v3, n11, pN/A, Feb. 1992.
_____	The Gale Group	"Panoderm I Lotion" (Trade Newsletter) Manufacturer: American Biologics, Category: Beauty Skin Care, Supplier Number 40800116, Product Alert, v19, n21, pN/A, May 22, 1989.

_____	The Gale Group	"Chemophobia Haunts Food Preservative Suppliers," Chemical Business, 55-601 (January, 1984).
_____	The Gale Group	"Basic Boron Prices have Soared due to the Demand for Insulation Materials and the Limited Supplies of Sodium Tetraborate (Borax) and Boric Acid," CPI Management Services, p.5, 61, January 16, 1978.

6. Other

Examiner
Initials

Relevant Information

_____	An abstract entitled, "Method of Non-Destructive Treatment of Wallboard in Remediation and Prevention of Mold Infestation" was submitted for publication on or about January 27, 2003 to the Federation of Societies for Coatings Technology. It is the understanding of the inventors that this abstract was never published.
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Examiner's Name: _____

Examiner's Signature: /William Phillip Fletcher III/

Date Considered: 04/13/2009, 200